

Applicant : Shinji Mackawa  
Serial No. : 09/724,403  
Filed : November 27, 2000  
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Attorney's Docket No.: 07977-258001 / US4448

### REMARKS

Claims 1-71 are pending in this application, with claims 1, 7-11, 21, 31, 33 34, 37-40 and 61 being independent. Claims 5, 6, 10-19 and 21-59 have been previously withdrawn from consideration, claims 1, 7-9 and 61-66 have been amended, and dependent claims 67-71 have been added.

The certified copy of the Japanese application JP 11-336850 priority document was received by the Patent Office on November 28, 2000, as evidenced by the attached copy of the date-stamped postcard listing the priority document. A copy of the application transmittal letter listing the priority document and a copy of the first page of the priority document are also included. Applicant respectfully requests that receipt of the priority document be acknowledged. In the event that the previously submitted certified copy cannot be located, applicant will submit a new copy.

With respect to the IDS referred to by the Examiner as being filed on September 2, 2002, applicant is not able to find any record of the IDS. Applicant respectfully requests a copy of the IDS.

Claim 20 has been rejected as being indefinite for reciting "claim 4 or claim 9". Claim 20 was previously amended to overcome this rejection in the response that was submitted on March 27, 2003. Accordingly, applicant requests withdrawal of this rejection.

Independent claims 1 and 7 and dependent claims 2, 62, and 65 have been rejected as being unpatentable over Wilcoxon (U.S. Patent No. 5,059,556).

Each of claims 1 and 7, as amended, recites a method of manufacturing a semiconductor device including the step of "forming a material ... in contact with the semiconductor film, whereby *an impurity element in the semiconductor film is gettered into the material.*" Wilcoxon does not describe or suggest forming such a material.

The platinum layer 14 of Wilcoxon, which the Examiner appears to equate to the recited material, is deposited onto the etched polysilicon layer 12, which the Examiner appears to equate to the semiconductor film, through sputtering by using argon to bombard a platinum target (col. 4, lines 37-41). Contrary to the Examiner's assertion, Wilcoxon does not describe or suggest that

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the argon, which is used to sputter platinum atoms off of the platinum target, is an impurity element in the polysilicon layer 12 that is gettered from the polysilicon layer 12 to the platinum layer 14. Rather, argon is introduced solely to describe an exemplary sputtering method that may be used to form the platinum layer 14. In fact, Wilcoxon does not describe or suggest the use of any type of gettering technique to remove impurities from a semiconductor film.

For at least these reasons, applicant requests withdrawal of the rejection of claims 1 and 7, and the rejection of claim 2, which depends from claim 1.

Also, applicant notes that claim 1 does not recite "a material having a stress of *not more than*  $8 \times 10^9 / \text{cm}^2$  . . . , whereby *an argon impurity element* in the semiconductor film . . ." as stated by the Examiner. Instead, claim 1 recites a material having a tensile stress of  $8 \times 10^9 \text{ dynes/cm}^2$  or more . . . , whereby an *impurity element* in the semiconductor film . . ." (emphasis added).

Claim 61, from which rejected claims 62 and 65 depend, recites "forming a material having a tensile stress of  $8 \times 10^9 \text{ dynes/cm}^2$  or more in contact with the semiconductor film, whereby *an impurity element is gettered into the material*" (emphasis added). For the same reasons discussed above in reference to claims 1 and 7, Wilcoxon does not describe or suggest forming the recited material. Accordingly, applicant requests withdrawal of the rejection of claims 62 and 65, which depend from claim 61.

Independent claims 8 and 9 and dependent claims 3, 4, 20, 60, 63, 64, and 66 are unpatentable over Wilcoxon in view of Yonehara (U.S. Patent No. 5,670,411).

Claims 3 and 4 depend from claim 1. As discussed above in reference to claim 1, Wilcoxon does not describe or suggest forming the material recited in claim 1. Yonehara, which describes a process for making a semiconductor on an insulator substrate, does not remedy this failure. In particular, Yonehara does not describe or suggest forming the recited material to getter impurities from a semiconductor film. Accordingly, applicant requests reconsideration and withdrawal of the rejection of claims 3 and 4.

Each of independent claims 8 and 9, as amended, recites a method of manufacturing a semiconductor device that includes the step of "forming a material . . . in contact with the semiconductor film, whereby *an impurity element in the semiconductor film is gettered into the material*" (emphasis added). As discussed above, neither Wilcoxon, Yonehara, nor any

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combination of the two describes or suggests forming such a material. For at least this reason, applicant requests withdrawal of the rejection of claims 8 and 9 and their dependent claims.

Claims 63, 64, and 66 depend from claim 61. As discussed above, Wilcoxon does not describe or suggest forming the material recited in claim 61. Yonehara does not remedy this failure. Accordingly, applicant requests reconsideration and withdrawal of the rejection of claims 63, 64, and 66.

Independent claim 61 has been rejected as being unpatentable over Wilcoxon in view of Yamazaki (U.S. Patent No. 6,444,390).

As discussed above, Wilcoxon does not describe or suggest forming the material recited in claim 61. Yamazaki, which describes a process for producing a crystalline silicon film used for semiconductor thin film devices by using a group 14 element and applying a high temperature oxidizing treatment, does not remedy this failure. Yamazaki does not describe or suggest "forming a material having a tensile stress of  $8 \times 10^9$  dynes/cm<sup>2</sup> or more in contact with the semiconductor film, whereby *an impurity element is gettered into the material*" (emphasis added) as recited in claim 61. For at least this reason, neither Wilcoxon, Yamazaki, nor any combination of the two describe or suggest forming the recited material. Therefore, applicant requests reconsideration and withdrawal of the rejection.

Applicant submits that all claims are in condition for allowance.

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Enclosed is a \$110 check for the Petition for One-Month Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 10/20/03

  
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